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STATISTICAL BULLETIN
Metropolitan Life Insurance Co.

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THE DECLINE IN TUBERCULOSIS IS GENERAL (*Concluded*)

In the February STATISTICAL BULLETIN it was shown that the rapidly declining tuberculosis deathrate has benefited all elements of the population regardless of race, sex, or age. Further facts are now presented to show that the mortality has dropped in all regions of the country, in both the cities and the rural districts, in practically all occupations and in all economic strata of the population.

We may first consider the tuberculosis deathrates for twenty states, representing all sections of the country. Without exception, the 1929 figures for tuberculosis show marked drops as compared with those for 1910. The declines run from a minimum of 32 per cent. in Michigan, to 62 per cent. in New Hampshire and Rhode Island. With a very few exceptions the deathrate has dropped continuously. The table on page 2 shows these facts.

The improvement has been much greater in the cities than in the rural districts. The table on page 3 shows that the very smallest decline in the urban population of any state was 48 per cent., while the maximum drop was 79 per cent. In the rural districts, drops ranging from 1.8 per cent. to 55 per cent. are shown for 15 of the 20 states. In the remaining five states the figures actually show increases—and in two cases very large increases. These figures must be interpreted in the light of several conditioning factors. Being crude rates, they do not take into consideration the item of non-resident deaths. Again, many tuberculosis sanatoriums have been established within the last 20 years. Most of these are in the rural districts and many deaths from tuberculosis have occurred within them. These deaths, obviously, are largely those of persons who actually lived in the cities, but whose deaths are counted in the rural totals. Important as is this conditioning factor, the improvement shown for the cities is so very much the larger that there can be no doubt that in our urban population the drop in mortality from tuberculosis has been greater than in the rural districts.

Deathrates from Tuberculosis (All Forms) per 100,000 Population, for the Years 1910, 1915, 1920, 1925 and 1929 for Each Registration State of 1910, with Per Cent. Reduction, Years 1910 and 1929

STATE	Deathrates per 100,000					Per cent. decline Years 1910 and 1929
	1910	1915	1920	1925	1929	
California	204.6	190.0	159.6	142.0	106.5	47.9
Colorado	225.5	179.7	225.4	152.4	124.6	44.7
Connecticut	149.8	139.5	119.4	73.8	65.0	56.6
Indiana	174.1	142.5	108.8	82.2	74.2	57.4
Maine	149.7	126.5	103.8	63.2	60.4	59.7
Maryland	197.2	187.7	146.7	120.8	104.0	47.3
Massachusetts	163.0	141.6	113.8	83.0	69.3	57.5
Michigan	97.3	90.6	83.6	66.5	66.5	31.7
Minnesota	109.0	101.8	89.5	60.2	56.1	48.5
Montana	105.6	113.1	75.1	58.9	65.7	37.8
New Hampshire	135.8	122.4	97.0	65.7	51.1	62.4
New Jersey	181.9	153.9	114.0	80.3	71.5	60.7
New York	180.7	168.8	120.9	92.1	75.2	58.4
Ohio	150.5	125.3	102.8	74.5	69.8	53.6
Pennsylvania	133.8	129.2	105.0	77.0	66.0	50.7
Rhode Island	182.6	164.2	131.3	82.9	69.3	62.0
Utah	44.3	45.6	37.1	29.6	27.4	38.1
Vermont	113.6	93.2	81.8	71.2	69.6	38.7
Washington	108.4	101.4	98.4	79.1	66.7	38.5
Wisconsin	106.7	95.8	85.6	61.6	55.0	48.5

The facts for tuberculosis mortality, by occupation, are difficult to obtain. Deathrates cannot be computed because we do not know the number of persons actually engaged in any given occupation. We are thus compelled to make use of the comparative ratios of deaths from tuberculosis to the total number of deaths from all causes. Although this method has certain drawbacks it is still fairly reliable, and it indicates that there has been a general decline in the tuberculosis deathrate regardless of occupation. The greatest change has taken place among street and sewer cleaners, cordage and hemp mill workers, cigar makers and tobacco workers, longshoremen and stevedores, paper and pulp mill workers, and janitors and building employees. It is particularly gratifying to find that substantial decreases have been recorded for some of the occupations where the percentage of deaths from tuberculosis was greater than the average for all occupied males. Among these were cutlers and grinders, compositors, printers and pressmen, brass foundry workers, barbers and hairdressers, and cigar makers and tobacco workers.

There is very good evidence that the greatest decline in tuberculosis mortality has taken place among the least favored economic

stratum of the population. The best proof is afforded by comparing the mortality data of the Ordinary policyholders of the Metropolitan Life Insurance Company with the facts for the Industrial policyholders. The former, as a class, have much higher incomes, and carry insurance ranging from a minimum of $1,000 up to hundreds of thousands of dollars. Their deathrate in 1930 (48.7 per 100,000) may be compared with 132.3 per 100,000 in 1911—a drop of 63.2 per cent. As this group is comprised almost entirely of white persons, comparison is made with the experience of the white Industrial policyholders. This group consists of persons who carry insurance in small sums and pay small weekly premiums. In 1930, their tuberculosis deathrate was 68.3 per cent. lower than it was in 1911.

There is still further evidence that the mortality improvement has been greater among the wage earning group than among the more prosperous element. This evidence is afforded by comparing the trend of the mortality rates of the many millions of insured wage earners and their dependents with the trend in the general popula-

Deathrates from Tuberculosis (All Forms) per 100,000 Population, Rural and Urban, with Per Cent. Reduction, Years 1910 and 1929

STATE	Deathrates per 100,000				Per cent. decline Years 1910 and 1929	
	1910		1929			
	Urban	Rural	Urban	Rural	Urban	Rural
California	225.9	180.9	72.2	200.7	68.0	*10.9
Colorado	319.9	168.6	116.2	133.1	63.7	21.1
Connecticut	159.4	130.5	67.5	59.1	57.7	54.7
Indiana	195.1	165.1	57.4	95.1	70.6	42.4
Maine	180.4	140.7	41.8	72.9	76.8	48.2
Maryland	246.2	154.4	93.3	119.9	62.1	22.3
Massachusetts	158.6	177.2	56.6	185.9	64.3	*4.9
Michigan	113.0	88.4	59.1	82.2	47.7	7.0
Minnesota	137.0	96.3	41.0	70.7	70.1	26.6
Montana	155.3	66.5	55.7	70.9	64.1	*6.6
New Hampshire	154.1	123.3	36.4	72.1	76.4	41.5
New Jersey	193.6	160.1	41.1	215.9	78.8	*34.9
New York	194.8	138.4	66.1	121.4	66.1	12.3
Ohio	173.8	131.9	61.2	87.9	64.8	33.4
Pennsylvania	160.8	109.0	51.8	96.0	67.8	11.9
Rhode Island	196.6	121.5	49.7	307.0	74.7	*152.7
Utah	83.0	26.2	31.1	23.4	62.5	10.7
Vermont	160.4	106.6	46.4	81.1	71.1	23.9
Washington	123.4	94.3	46.8	92.6	62.1	1.8
Wisconsin	128.2	96.5	38.9	73.0	69.7	24.4

*Increase.

tion of the United States. We have limited this comparison to the ages one to seventy-four, because relatively few infant lives are insured, and because the ratio of elderly people in the insurance experience is very small as compared with that of the general population. The difference between the declines for these two groups is considerable. Among the insured, the 1929 tuberculosis deathrate was 61.1 per cent. lower than in 1911, whereas in the population, at large, the decline was only 52.1 per cent.

Thus, whatever measure we may use, the facts show clearly that the campaign against tuberculosis has been successful beyond the fondest hopes of even the most optimistic of public health workers, as expressed two decades ago. In addition to being large, the decline has been practically continuous. Much of the resultant saving of lives is the outcome of a campaign of general health education. Emphasis has been laid upon disseminating knowledge of personal hygiene in order that the people might learn how to strengthen their resistance against infection with, and development of tuberculosis. As applied to those who had contracted the disease, the campaign has been to arrest, and if possible, to cure. And many thousands of arrests of tuberculosis—rare only a few decades ago—are now accomplished every year. Arrests are looked upon today as the usual and expected thing. Every case arrested prevents infection in other cases. Health agencies, both public and private, have established clinics and sanatoriums with the result that more and more physicians have learned the technique of diagnosis and treatment.

As we have pointed out in earlier numbers of the STATISTICAL BULLETIN, there is every prospect that the downward swing in the tuberculosis deathrate will continue; and that, by 1940, the mortality rate will not exceed 40 per 100,000. One of the most encouraging notes we have yet been able to sound arises from what has happened during the two elapsed months of 1931. In this period, under adverse general health conditions, with a pronounced rise in the general deathrate, and with increased mortality from almost every other important disease, there has actually been registered among Metropolitan Industrial policyholders a further drop of the tuberculosis deathrate to a new minimum for the corresponding season of any year. It is very clear, therefore, that much greater progress in the conquest of the disease is within easy reach. The improvement of economic conditions and increased activity along lines which we know are effective should reduce the deathrate markedly. It is necessary that more cases of the disease be found; that they be treated in their incipiency and later systematically followed up when

discharged from sanatoriums. The isolation of more advanced cases of the disease in hospitals will prevent many new infections. And finally the provision of supervised employment for cases discharged from sanatoria will help many to maintain themselves in health and vigor. When these activities, which have proved their worth, have been launched in every corner of the country and given adequate financial support, it will be but a relatively short time when tuberculosis will be relegated to the minor causes of death.

FATAL ACCIDENTS IN OLD AGE

The problem of fatal accidents is concentrated largely among children and old people. Two out of every five accidental deaths occur among those who are under 15 years or who have reached sixty-five years. Relatively few of these deaths are of occupational origin. They occur, almost entirely, in the home, on the streets or in other "public places"—among the old, mostly in the home.

Falls are by far the most important type of fatal accident among elderly persons. In fact, more old people lose their lives through falls than in all other forms of accident combined. The statistics for many years confirm this. They show, further, that falls cause about three times as many deaths every year as does the type of accident next in importance among old people, namely, automobile fatalities. Falls and automobile casualties combined cause every year more than two-thirds of all the fatal accidents among people who have passed age 65.

We may, therefore, discuss with profit the circumstances that underlie these two types of fatal accidents among old persons.

Fatal falls among the old occur, for the most part, in or about the home. About one-half of these fatalities are due to falling down stairs; and tripping over rugs or carpets, falling off or over chairs and falling in bathtubs are of no small importance. Such accidents, when they happen to younger persons, are not apt to terminate fatally; but in old age any sort of injury, including the shocks arising from fractures, dislocations, multiple contusions, or even lesser injuries, often hasten death, even if they are not primary causes.

What can be done to check the rising deathrate from falls among elderly persons? It should be remembered that the elderly woman is a more frequent victim than the elderly man. Home safety, then, should be taught by women's organizations. This, in fact, is now being done by the GENERAL FEDERATION OF WOMEN'S CLUBS in several states, notably, Illinois, Pennsylvania, and North Carolina. The majority of these falls, among both elderly men and women,

would never occur if a little more care and forethought were exercised. Sane precautions are called for to see that homes are kept in such order as to minimize the danger of falls. Many fatal falls are traceable to poor illumination, loose, broken, or badly spaced treads, or to obstructions left on stairways. The combination of highly polished floors and small rugs is particularly dangerous.

One death out of every seven in automobile accidents is that of an elderly person. This ratio bids fair to become higher. Automobile fatalities have become the foremost of all safety problems at all times of life, and much attention has been directed toward their control as they affect childhood. As a result we appear to have achieved a slight decrease in deaths among children. But (although little emphasis has ever been placed upon the fact) the actual death-rate from automobile accidents is higher in old age than in childhood—and the increase is still going on.

There are other types of fatal accidents prominent in old age. More than one-fifth of the accidental asphyxiations by gas affect old people; one-eighth of the fatal burns; one-sixth of the accidents due to cutting and piercing instruments; one-fifth of those due to street-cars and horse-drawn vehicles; over one-fifth of the deaths due to injuries by animals; two-fifths of those caused by excessive cold; and one-quarter of those due to excessive heat.

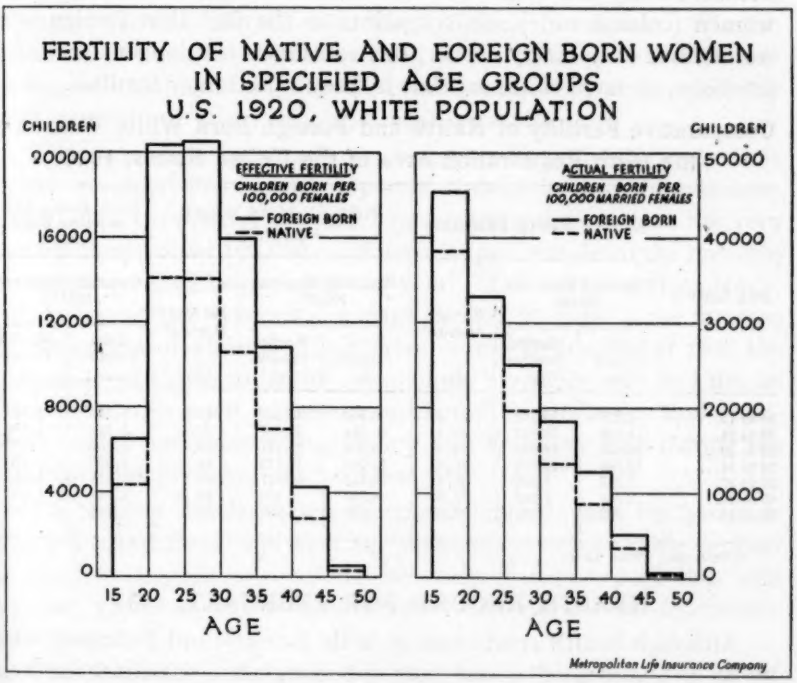
On the other hand, it is relatively seldom that old people die of accidental poisoning by solid or liquid substances; very few are drowned, shoot themselves accidentally or are killed by lightning. Among the deaths due to occupational hazards, such as mining, quarry or machinery accidents, elderly people seldom figure because few are exposed to these risks. Deaths in airplane and balloon accidents are almost nil.

FERTILITY OF FOREIGN BORN WOMEN THIRTY PER CENT. GREATER THAN NATIVE BORN

The fertility of the foreign born, as measured by the annual number of births per 100,000 women of the childbearing ages, is very materially greater than that of the native born, throughout the reproductive period. This is because first, a larger proportion of foreign born women marry, and second, those that marry have larger families.

The two diagrams in the chart on page 7 illustrate these facts. The panel on the left shows the annual number of births per 100,000 white women, regardless of marital state, in quinquennial age groups from 15 to 49, foreign born and native contrasted. This

diagram, therefore, corresponds to the *effective* fertility, the resultant of marriage rate and *actual* fertility in marriage. The second panel, on the right, shows the annual number of births per 100,000 *married* white women, in the same age groups, foreign born and native contrasted. The general appearance presented by this diagram is similar to that of the first, but the contrast is somewhat reduced, showing that the greater effective fertility of the foreign born is due in part to the larger proportion of them that marry, and to their earlier marriage.



The ratio of the effective fertility of foreign born to that of native born is shown in the table on page 8, which also gives the corresponding ratio of the actual fertility of the married women, and the per cent. married, in each case for quinquennial age groups.

The figures in the last two columns of the table are of particular interest. It will be observed from the figures in column eight that the *effective* fertility, measured by the number of annual births per 100,000 females, is about 50 per cent. greater for foreign born than for native born, and the number is greatest at the higher ages of mothers. But the *actual* fertility of the *married* women (column nine of the table) is less than 20 per cent. higher for foreign born than for the

native born mothers, at the younger ages. As we proceed to higher age groups, the ratio increases; in the age groups 25 to 34, where births are most concentrated, the excess of the fertility among foreign born married women is over 30 per cent. The meaning of these figures is clear: The higher effective fertility of the foreign born is in large measure due to their higher marriage rate; this is why the effective fertility shows a greater contrast between foreign born and native born than does the actual fertility of the married women. At the same time the marked increase, with age, in the ratio of the actual fertility of foreign born as compared with native born *married* women (column nine), clearly points to the fact that foreign born women not only marry earlier, but continue for a longer time, after marriage, to have children; that is, they raise larger families.

Comparative Fertility of Native and Foreign Born White Women in the Birth Registration Area of the United States, 1920

AGE GROUP	NATIVE WHITE FEMALES			FOREIGN BORN WHITE FEMALES			Ratio: Foreign Born to Native White Females	
	CHILDREN BORN PER 100,000		Per cent. Married*	CHILDREN BORN PER 100,000		Per cent. Married*	CHILDREN BORN PER 100,000	
	Total Females	Married Females		Total Females	Married Females		Total Females	Married Females
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
15 to 19.....	4,338	38,394	11.3	6,490	45,320	14.3	1.496	1.180
20 to 24.....	14,090	28,522	49.4	20,344	33,037	61.6	1.444	1.158
25 to 29.....	14,025	19,646	71.4	20,498	25,114	81.6	1.462	1.278
30 to 34.....	10,569	13,418	78.8	15,940	18,412	86.6	1.508	1.372
35 to 39.....	6,986	8,699	80.3	10,812	12,517	86.4	1.548	1.439
40 to 44.....	2,789	3,540	78.8	4,264	5,153	83.0	1.529	1.456
45 to 49.....	292	383	76.3	518	656	79.0	1.775	1.715

*Continental United States.

HEALTH RECORD FOR FEBRUARY, 1931

Although health conditions in both January and February were by no means as good as last year, the cumulative deathrate for these two months is not far from the average for the same period during the last ten years. The year-to-date mortality rate, in fact, was only 6.3 per cent. higher than the minimum for this two months period—recorded only last year.

The higher mortality this year has not applied to Canada and to that part of the United States lying West of the Rocky Mountains. Among approximately one and one-quarter millions of Metropolitan policyholders who live in Canada, the early 1931 health record has indeed been better than ever before, and among 1,140,000 living West of the Rockies, a slight drop is in evidence as compared with last year.

The relatively higher mortality in January and February was due, directly or indirectly, to the widespread prevalence of influenza and pneumonia. The combined deathrate for these diseases at the end of February was 27.6 per cent. higher than in 1930. As invariably happens when there is above-average prevalence of influenza, increased deathrates were recorded for the principal degenerative conditions (heart disease, chronic nephritis and cerebral hemorrhage). The mortality rates for cancer and diabetes also increased sharply, and it is certain that influenzal attacks hastened the deaths of many persons affected with these chronic conditions. The increase in the general deathrate only serves to emphasize that any widespread outbreak of influenza, even though the type be relatively mild, constitutes a serious public health hazard.

There are three outstandingly favorable items in the early 1931 health record. The remarkably low diphtheria deathrate is foremost. The cumulative mortality rate for this disease is at the very low figure of 6.3 per 100,000—a drop of 37 per cent. from the previous minimum for the like period of any year. The mortality from tuberculosis has actually recorded a small decline in spite of the increase in the general deathrate. This gives reason for the belief that the continuity of the drop in the tuberculosis mortality rate will not be interrupted this year. Diseases incidental to pregnancy and childbirth caused fewer deaths in January and February than during the corresponding period of any previous year.

The suicide deathrate has increased slightly; that for homicide shows a small drop, and that for accidents a considerable decline. It is discouraging, however, to be compelled to report that still another year has begun unfavorably with respect to automobile fatalities.

The deathrate in the general population of the large cities of the United States in February was 14.2 per 1,000, as compared with 14.0 in January and 14.3 in February, 1930. Comparison with January shows increased prevalence of influenza, measles, scarlet fever and smallpox, together with reduced incidence of diphtheria, poliomyelitis and typhoid fever. As compared with February, 1930, there were more cases of measles, poliomyelitis, scarlet fever and influenza, and fewer cases of diphtheria, smallpox and typhoid fever. These statements are based on the number of cases reported during the first four weeks of January and February, 1931, and February, 1930.

Diphtheria cases in 33 states declined from 4,437 in January to 3,865 in February. Reports from 31 states show that there were

twice as many measles cases in February as in January. The more noteworthy increases were in New York, New Jersey, Indiana, Illinois, Maryland and California. Scarlet fever, in 45 states, increased from 17,167 cases in January to 20,169 in February. Massachusetts and New York showed the largest increases.

Reports from 23 states show that there were more than two and one-half times as many cases of influenza in February as in January. The increase was general throughout the country except in New York City and Pennsylvania. It was particularly marked in North and South Carolina and Georgia.

Poliomyelitis cases, according to reports from 45 states, dropped from 202 in January to 97 in February.

Noteworthy increases in the prevalence of smallpox were observed in Iowa, Oklahoma and Texas. Reports from 45 states show that cases increased from 3,771 in January to 3,944 in February.

The following are among the more noteworthy of recent public health activities. Two narcotic farms for the treatment of persons addicted to the use of drugs will be administered by the newly established DIVISION OF MENTAL HYGIENE OF THE UNITED STATES PUBLIC HEALTH SERVICE. A scientific study of human problems in industry will be made by the INDUSTRIAL COMMITTEE OF THE INSTITUTE OF HUMAN RELATIONS, YALE UNIVERSITY. Among the questions to be studied are fatigue, occupational diseases, capacity to learn, emotional effects of fear of loss of job and other important items. A bill providing a new health program for New York State has been introduced into the Legislature. This bill embodies the major recommendations of the NEW YORK STATE HEALTH COMMISSION. The organization of the INTERNATIONAL COMMITTEE FOR MENTAL HYGIENE was completed with the incorporation of this Committee on January 9th. The establishment of this organization was one of the principal accomplishments of the FIRST INTERNATIONAL CONGRESS ON MENTAL HYGIENE, and was undertaken in response to the declared need for a permanent body to further the international development of mental hygiene activities.

The following table shows the mortality among Industrial policyholders for February, 1931; January, 1931, and February, 1930, together with the cumulative rate for the first two months of each year.

METROPOLITAN LIFE INSURANCE COMPANY

Deathrates* per 100,000 for Principal Causes, Premium-Paying Business in Industrial Department (Annual Basis)

MONTHS OF FEBRUARY, 1931; JANUARY, 1931, AND OF FEBRUARY, 1930

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED*				
	Feb. 1931	Jan. 1931	Feb. 1930	Cumulative Jan.-Feb.	
				1931	1930
TOTAL—ALL CAUSES	1034.4	989.5	963.8	1010.9	951.3
Typhoid fever	1.3	1.4	1.3	1.4	1.2
Measles	3.0	2.6	3.3	2.8	2.7
Scarlet fever	4.1	3.3	3.9	3.7	3.8
Whooping cough	4.6	4.0	5.5	4.3	5.0
Diphtheria	5.7	6.8	9.0	6.3	10.0
Influenza	58.6	30.3	27.3	43.8	26.7
Tuberculosis (All forms)	81.9	78.0	82.3	79.8	80.9
Tuberculosis of resp'y system	72.2	69.9	71.9	71.0	70.8
Cancer	84.0	81.6	73.1	82.7	73.8
Diabetes mellitus	25.3	23.5	20.2	24.3	21.3
Cerebral hemorrhage	64.2	75.1	68.2	69.9	63.5
Organic diseases of heart	171.9	175.6	169.0	173.8	165.0
Pneumonia (All forms)	146.7	122.9	117.2	134.2	112.8
Other respiratory diseases	15.1	13.8	11.8	14.4	12.6
Diarrhea and enteritis	9.1	11.1	11.1	10.1	11.3
Bright's disease (Chronic nephritis)	75.1	74.6	71.0	74.9	72.4
Puerperal state	10.9	11.1	14.4	11.0	13.1
Suicides	9.3	7.7	7.5	8.5	8.1
Homicides	5.6	6.8	5.5	6.2	6.3
Other external causes (excluding suicides and homicides)	51.5	58.2	58.7	55.1	60.1
Traumatism by automobiles	15.3	21.7	16.4	18.7	18.4
All other causes	206.5	200.9	203.5	203.6	200.8

*All figures in this table include insured infants under one year of age. The rates are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

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DEATHRATES
FROM ALL CAUSES

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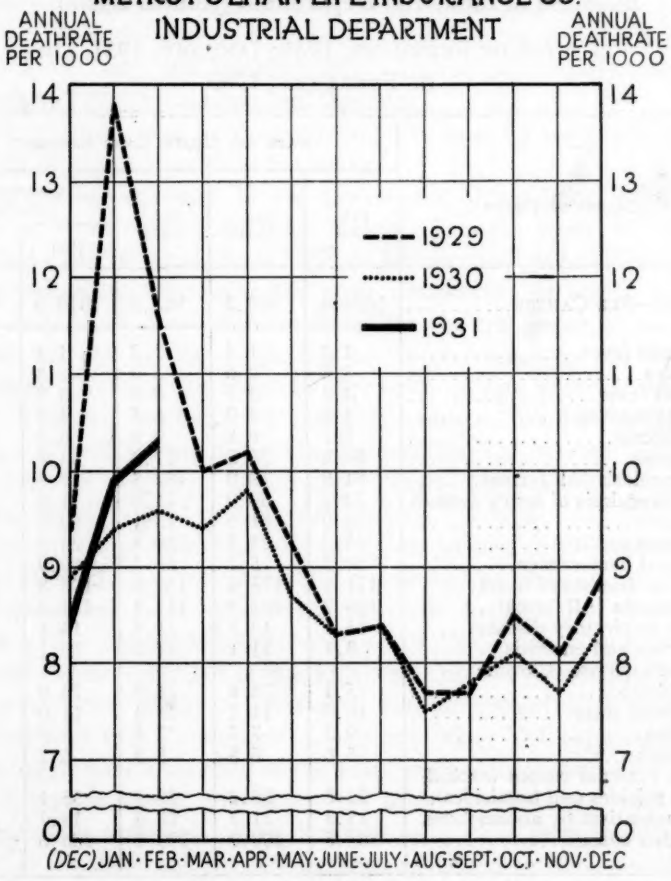
INDUSTRIAL DEPARTMENT



1929*	13.8	11.6	10.0	10.2	9.2	8.3	8.4	7.7	7.7	8.5	8.1	8.9
1930	9.4	9.6	9.4	9.8	8.7	8.3	8.4	7.5	7.8	8.1	7.7	8.4
1931	9.9	10.3										

*Rates for 1929 are final

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